

### Offered Title: Asteroids in Our Neighborhood

Most asteroids reside in the space between Mars and Jupiter, the asteroid belt. There are however a bunch of asteroids that don't conform and are in orbits that bring them close to Earth, sometimes very close.

Fortunately, there are a bunch of astronomers locating and tracking these "rogue" rocks. That's very good, but that's not all. They are locating and tracking any objects that get close to us, called Near Earth Objects (NEO). For this article I am concentrating on asteroids, Near Earth Asteroids (NEA), as they share the same orbit around the Sun as our Earth.

The current estimate is we know where 95% of large near-Earth asteroids are at any given time. What do I mean by large? We're talking rocks 1 kilometer (0.6 mile) in size or larger! Any rock this size is considered a significant threat to most life on our planet should it hit us.

Asteroids smaller than 1 kilometer in size represent a lesser known threat as they are more difficult to find until they are relatively close. Most of the smaller asteroids we know about have been discovered just before or just after zipping past Earth. Other unknown threat asteroids include those coming from interstellar space, such as Oumuamua (C/2017 U1), but they are expected to be very rare.

To date astronomers from various "watch" groups, including NASA, have cataloged 893 asteroids 1 kilometer or larger, 8169 asteroids between 140 meters and 1 kilometer, and 9143 asteroids less than 140 meters in size.

Putting these rocks in perspective, 140 meters is 459 feet. This is a smallish asteroid and that's twice the length of a Boeing 747! Meteor crater in Arizona is 3,900 feet across rim to rim and was caused by a rock only about 50 meters in size. OK, now this brings up the question, what's the difference between an asteroid, a meteor and a meteorite? A meteor is the streaking bright tail produced by any object from space burning up in Earth's atmosphere. A meteorite is the name given for any surviving meteor material making it to Earth. Think of an asteroid as a meteorite that is not on Earth.

How often do these rogue rocks come close to us? So far in 2018 we have had over 140 flybys'. Most were well beyond the Moon's orbit but nine slipped between us and the Moon. A little close for comfort, eh? Within the next sixty days there will be 6 known flybys', and all are beyond the Moon's orbit.

Viewing an asteroid flyby is possible if the asteroid is large enough, close enough, and of course, in our northern hemisphere sky...at night. It isn't like watching a satellite though, their apparent speed is slower, so patience is needed.

Have an astronomy question? **Ask the Astronomer:** [eweandnle@gmail.com](mailto:eweandnle@gmail.com)

### What's in the Sky?

Venus is brilliant in the west-northwest. It is close to Pollux and Castor in Gemini on June 8 at dusk.